

Monthly Activity Report

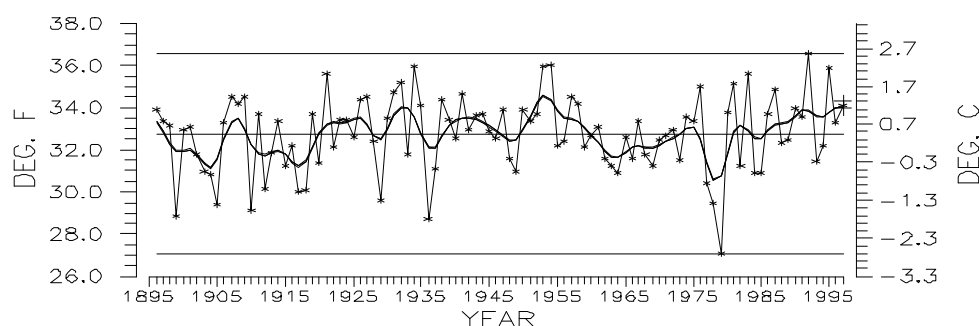
February 1997

National Climatic Data Center

A National Resource for Climate Information



U.S. NATIONAL TEMPERATURE
DEC-FEB, 1895-96 to 1996-97



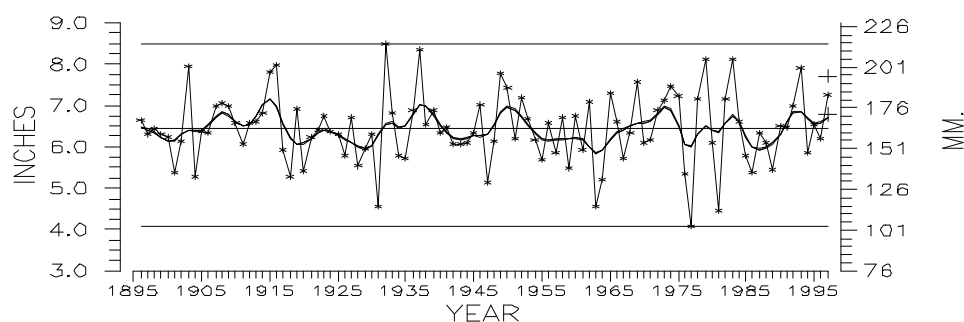
National Climatic Data Center, NOAA

STRAIGHT HORIZONTAL LINES ARE
MAXIMUM VALUE (TOP),
LONG-TERM AVERAGE (MIDDLE),
MINIMUM VALUE (BOTTOM)

THICK SMOOTH CURVE
IS 9-POINT BINOMIAL
FILTER.

CONFIDENCE INTERVAL
FOR CURRENT YEAR IS
INDICATED BY '+',

U.S. NATIONAL PRECIPITATION
DEC-FEB, 1895-96 to 1996-97



National Climatic Data Center, NOAA

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Preliminary data for winter (Dec-Feb) 1996-97 indicate that temperature averaged across the contiguous United States was above the long-term-mean ranking as the 22nd warmest winter since 1895. About a twelfth of the country averaged much warmer than normal, and less than one percent averaged much colder than normal (Top Figure).

Winter 1996-97 was the 14th wettest winter since 1895. About one-sixth of the country averaged much wetter than normal, while about four percent averaged much drier than normal (Bottom Figure).

DIRECTOR'S HIGHLIGHTS

NCDC to Host Satellite Applications Conference

NCDC will be the host to a Satellite Applications Conference March 4-6, 1997. The main purpose of the conference is to introduce NCDC to the satellite user and scientific communities. Themes to be covered include information exchange among experienced and novice users; exploration of unique and non-traditional applications; and, exploration of blended products (multi satellite, satellite/in-situ, etc.).

NCDC Hits the Million Mark for Customer Contacts During 1996

NCDC provided data and information to more than one million on-line and off-line users during 1996. Customer contacts are mainly through NCDC's Climate Services Division (CSD) and the NCDC World Wide Web (WWW) Home Page. About 85 percent of the total number of contacts during 1996 came through NCDC's on-line services. NCDC also had a marked increase in the number of users, files accessed, and data downloaded via the WWW over the past year. In 1996, almost 900,000 users downloaded more than 7.6 million files and 388.0 gigabytes of data and information. In contrast, 1995 had 235,000 users who downloaded 2.1 million files and 162.0 gigabytes of data and information.

February Records Set in Customer Service

February 1997 customer service operations set a new February record of 13,073 customer transactions representing a 10 percent increase from February 1996 statistics. Total customer orders showed a 24 percent gain over February

1996 levels. Electronic mail customer contacts continued to display dramatic growth as evidenced by the 69 percent increase over February receipts a year ago. The 12 percent decline in facsimile messages demonstrates the shift in customer media preference from facsimile transmissions to electronic mail. We should note that the modest record activity in February 1997 may be due to the small number of winter weather events that occurred in the heavily populated cities of the eastern United States--the region from which the largest percentage of NCDC data requests originates.

NCDC Participates at the 1997 Annual American Meteorological Society (AMS) Meeting

Twelve NCDC scientists attended the annual AMS meeting in Long Beach, California, during February 2-7, 1997. NCDC attendees presented papers, chaired various sessions, and staffed the NCDC exhibit booth. NCDC was one of ten NOAA exhibitors at the conference. Many climate data users visited the NCDC booth to investigate the NCDC WWW site and to get the latest Products and Services Guide. The various additions and improvements made to the NCDC Home Page as well as the variety of services we provide impressed most of the booth visitors. NCDC's Climate Visualization (CLIMVIS) system brought rave reviews from many attendees.

Historical GOES Browse Server

NCDC has placed a historical Geostationary Operational Environmental Satellite (GOES) browse server on-line. This web site is unique in that it provides a growing archive of on-line

GOES-8 and GOES-9 retrospective images. Browse imagery at 8km resolution is currently available beginning on December 14, 1996, and continuing to the present. These daily browse imagery covers much of the western northern hemisphere at approximately 0000 UTC (7:00 p.m. EST) and 1200 UTC (7:00 a.m. EST). Plans for the server include populating the on-line archive with full disk GOES infrared images back to mid-1992. The GOES browse server can be accessed from the NCDC Home Page (<http://www.ncdc.noaa.gov/>) under "What's New" and "On-Line Data Access."

GHCN CLIMVIS Implemented

The Global Historical Climatological precipitation data set and the software to visualize this comprehensive global baseline climate data set have been added to the NCDC Climate Visualization System (CLIMVIS). Users may plot monthly data precipitation values for the years 1697 through 1990 for more than 7,000 stations.

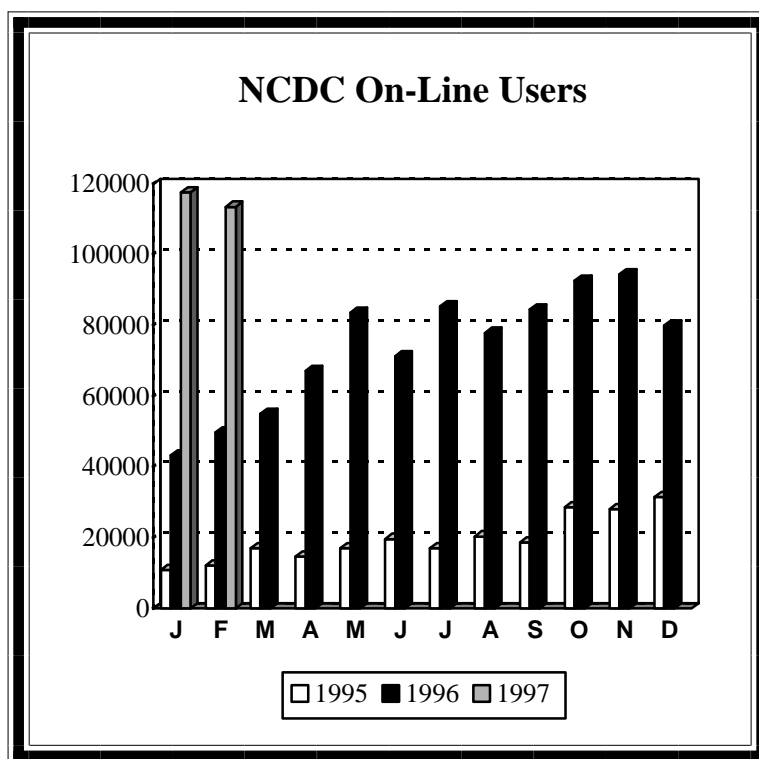
Visiting Scientist Completes Tour

Mr. Kun-Il Jang, a Meteorologist from the Korea Meteorological Administration, recently completed a three-month visit to NCDC. While at NCDC, he worked in the Data Operations Branch studying the processing of hourly precipitation data and cooperative data. Mr. Jang will use the information obtained at NCDC to help revise the quality control and archiving techniques used at the Korea Meteorological Administration. Mr. Jang also spent time generating time series for Korean stations from the Global Historic Climate

Network.

Diversity Training

Ms. Crystal Williams of International Training Associates provided diversity training to NCDC employees during a 3.5 hour training session. Ms. Williams' handling of the subject was very stimulating and informative. Many Center personnel submitted excellent comments regarding the training content as well as the instructor.



CLIMATE DATA AND INFORMATION SERVICES

♦ Data Base Development

NEXRAD Tape Merges

During February approximately 1.8 terabytes of Next-Generation Weather Radar (NEXRAD) Level II data from 522 processed tapes were merged to 91 archive tapes. NCDC continues to refine the merge procedure to reduce time required to create a merged archive tape--currently about one hour per gigabyte.

3590 Archive Project

IBM customer engineers have installed the 3494 tape library data server at the NCDC-Suitland facility and several critical items that were missing are now on order. Contractor support personnel are upgrading the AIX operating system on the SADDs RS/6000 workstation to support the 3590 archive project.

Additionally, support contractors have successfully tested all of the new programs developed to archive data on 3590 media. The only remaining programs to be written are utilities needed for error recovery and quality control. The new archive system is designed to utilize the 3494 data server and 3590 technology.

Browser Monitor Software Developed

NCDC now has software that monitors the types of browsers used by customers accessing the NCDC Home Page. February results show that Netscape accounted for 76.4 percent of the accesses, whereas only .4 percent of the accesses

were made using Mosaic. These statistics and the announcement by NCSA that it would no longer support Mosaic development resulted in the exclusion of Mosaic from the NCDC WWW page testing environment.

Data Compression

A method for compressing WSR-88D Level II data was reviewed by NCDC. While the technique has merit, particularly for research applications, it was considered inappropriate for use as the national archival format because the method sacrifices some potentially useful information. The technique is more suitable to disk storage than tape. The coding used as well as the compaction of characters from eight to six bits could cause significant data loss. The standard compression now used by NCDC provides for a 10:1 compression, compared to a 12:1 compression by the method evaluated.

Digital Data Rescue and Migration

As part of the Environmental Sciences Data Information Management (ESDIM) data rescue effort, NCDC has performed the following activities:

- (1) Archived back-up copies of 89,606 reels of NOAA Polar Orbiter Level 1B data since November 1991. The period of record of this data set is October 1991 through the present (operational).
- (2) Archived 3,852 gigabytes of NEXRAD Level II radar data on 1,006 exabyte tapes for the

NEXRAD project.

(3) Archived 51 gigabytes of radar data on 184 NEXRAD Level III disks.

(4) Archived library and back-up copies of NOAA Polar Orbiter Level 1B (TD-3602). The period of record of these data is November 1978 through March 1985. NCDC has rescued 20,765 cartridges from a total of 25,440 input cartridges of Level 1B and products. The total project rescue is 81.6 percent completed.

◆ Data and Information Distribution

New-Improved NCDC Products and Services Guide

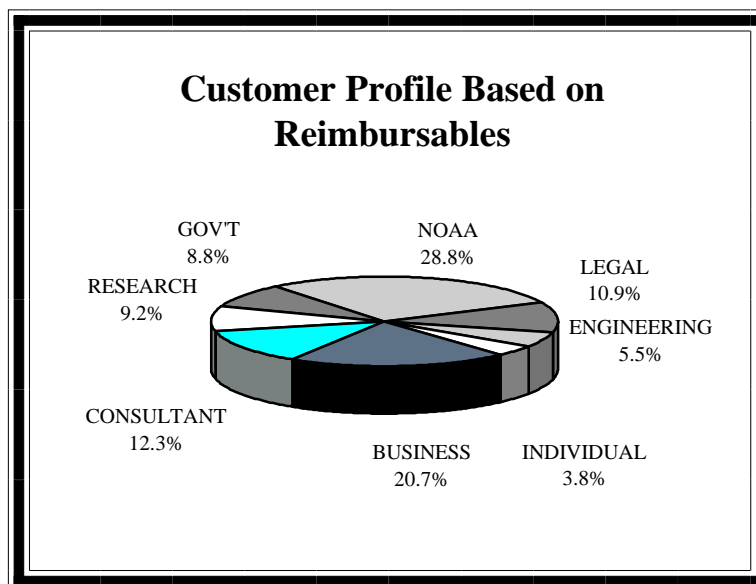
A newly updated version of NCDC's Products and Services Guide is now available. The 60-page guide features descriptions of NCDC's on-line systems, CD-ROM products, specialized products, digital data sets, and publications. We have enhanced the guide with the use of graphics, bolder headings, and an easy-to-read layout. The guide, which began three years ago as several pages of selected information stapled together, has become the Center's main method for providing a printed overview of NCDC. The guide is also available on-line in WordPerfect, ASCII text, and PDF formats.

NOAA Weather Chart Changes

In January 1997, the National Centers for Environmental Prediction (NCEP) ceased production of Northern Hemisphere Surface Charts, and NCDC began ingesting the combined Atlantic/Pacific Surface Charts. (The Atlantic/Pacific Surface Charts will serve as replacements for the NCEP charts no longer produced.) The Customer Ordering, Servicing, and Tracking (COST) system was modified to accept orders for the new charts that will also appear on the NOAA Weather Charts CD-ROM.

GFDL Transient GCM

NCDC has retrieved a historical transient general (climate) circulation model simulation for archiving and distribution. This model run starts with CO₂ and aerosols at 1766 levels, runs through the present and out to about 2060. In a transient model the climate forcing variables are introduced gradually as the model simulation progresses through time. NCDC is working on the details for putting parts of this model run on the



NCDC Home Page.

♦ Research Customer Service Group Requests

International Olympic Museum uses NCDC Climate Data

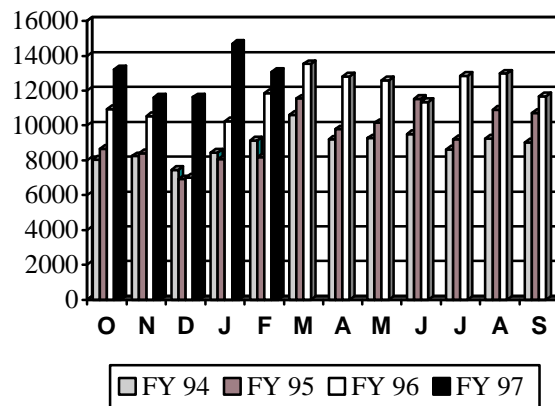
The curator of the International Olympic Museum in Lausanne, Switzerland, obtained temperature and humidity data for selected U.S. locations from NCDC. The museum is preparing to open an exhibition in July 1997 featuring Olympic Marathons. Museum personnel are looking at temperature, humidity, and other pertinent weather information for selected marathons as part of their display. NCDC provided a variety of historical weather and climate data dating back into the 1920 for their use in the exhibit.

♦ Satellite Data Requests

No Grape Shall be Picked Before its Time

A wine consulting firm in California is seeking help from NOAA. In past years aerial assessment of the condition of the grape crops in northern California was made using an infrared photogrammeter flown on an airplane. When the grapes are fully ripe for picking there is a unique signature in the spectral analysis. Timing the harvest perfectly will ensure that the highest quality wines are produced. Since cost of aerial surveys have spiraled upward in recent years, the grape growers are seeking alternative measures. One such measure may be incorporating satellite data gathered by the Polar Orbiter Environmental Satellites (POES). Daily high-spatial resolution (1-km) vegetation indices may provide enough information to save the firm money. The company

NCDC Off-Line Customers Contacts



plans initial comparisons for the harvest this fall.

Flooding of the Green

Meteorologists at the National Weather Service Forecast Office in Albany, New York, are working on a technical attachment and a proposed formal publication studying a severe flash flood event. The flooding struck the Green Mountains in southern Vermont during June 1996. Some aspects of the event that resulted in six inches of rain falling on two consecutive afternoons are being analyzed. NCDC furnished GOES-8 satellite images to the Forecast Office.

GOES Image Series Provided for Learning Channel Documentary

A producer for The Learning Channel contacted NCDC to obtain GOES satellite imagery for use in an upcoming television documentary to be entitled Anatomy of Disaster. The program will focus on the January 1997 major flooding event that

occurred along the U.S. west coast. GOES infrared imagery at 6-hour intervals from December 31, 1996, to January 2, 1997, were provided. The imagery shows the progression of Pacific storm systems into the western U.S.

♦ Interesting Requests

Tree-Ring Climatology Studies

NCDC was contacted by a researcher in the field of dendrochronology conducting tree-ring climatic reconstructions in India. He is comparing the climatic reproductions from the western Himalayan region in India with climatological data of other central Asian mountain regions. NCDC provided Summary of the Day daily data to the researcher for several locations in India. Additionally, the Global Summary of the Day data on the NCDC Climate Visualization (CLIMVIS) system will provide climatological data since 1994. The tree-ring data and the climatic data are being used to improve the climate parameterization in forest simulation models.

Sign of the Times

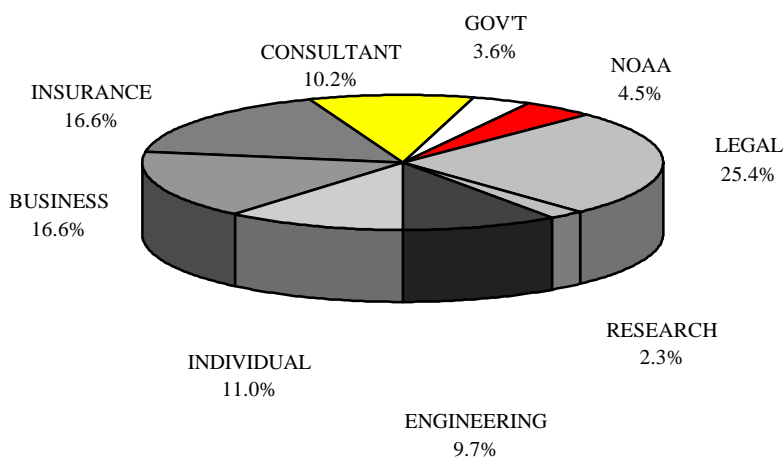
Downsizing, rightsizing, de-employing, and all the other euphemistic words to describe the dramatic changes in the United States workforce have prompted the need for a unique product. An author from California contacted NCDC for help in researching a book he will soon offer for sale. The book

is a relocation manual. Unlike the myriad of books on the market now, this one is not targeted exclusively to those soon to retire. This missive is trying to help those recently forced to relocate due to a change of employment. The manual is focusing not so much on preferable climates as it is attempting to forewarn the displaced worker as to what to expect once the inevitable move is made. Various publications detailing normals, means, and extremes for the U.S. were provided.

Backyard Launch Pad

NCDC provided upper air climatological data to a private contractor working in conjunction with the Federal Aviation Administration (FAA). Apparently anyone with \$200 can purchase a license to build a launch site for commercial satellites--even in their own backyard! This presents a potential problem for aviation traffic

Customer Profile Based on Orders



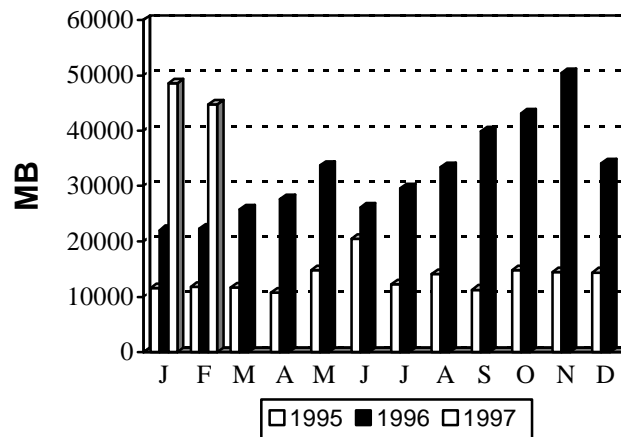
and homeowners in surrounding communities. The contractor is writing regulations which will restrict private individuals from building launch sites as well as providing legitimate personnel with wind drift information in the event of an explosion after liftoff. NCDC provided the CD-ROM Global Upper Air Climatic Atlas.

♦ Technology Applications

NCEP Storm Tracks

National Centers for Environmental Prediction (NCEP) is moving toward more automation of analyses, and as a result, storm track charts routinely produced by them and digitized by NCDC will now be produced in a different way. Beginning with the January 1997 charts, the tracks will continue to be hand analyzed for the Pacific and over North America; however, the Atlantic basin will only have positions extracted by an automated process from

NCDC Data Downloaded



machine contoured 12-hourly (instead of 6-hourly) analyses. NCDC will evaluate the Atlantic track positions and determine whether to continue to use them. If the automated method proves satisfactory, NCDC will consider placing the automated/digital track positions directly into the data base.

SCIENTIFIC AND PROFESSIONAL ACTIVITIES

♦ Working Groups/Committees/Meetings

Year 2000

Steve Evans attended a three-day conference on Year 2000 issues for computer systems. Mr. Evans provided a briefing to NCDC staff on legal, budgetary, and technical issues connected with resolving problems that may occur at the change of

the millennia. NCDC is investigating tools to aid in identifying date-related source code, expanding year-date fields to four-digits, generating test data, providing automated comparison testing, and implementing configuration management practices for facilitating Year 2000 renovation tasks. In addition, Dr. Dennis Perry, lead expert for the Orkand Corporation on Year 2000 issues, presented an overview of Orkand's efforts in resolving Year 2000 problems to Center personnel.

NOAA Strategic Plan Constituents Meeting

As part of the NOAA Constituents Meeting, NCDC's Tom Karl led the review of the Decadal-to-Centennial portion of the NOAA 5-Year Implementation Plan. Representatives from industry and academia provided input into the NOAA plan. They are now revising this plan as part of the NOAA FY 99 budget process.

Global Change Symposium - American Meteorological Society Meeting

Tom Karl of NCDC chaired the Global Change Symposium with able-assistance provided by Robert Quayle of NCDC and Henry Diaz of ERL. The Symposium was very well attended with many standing room only sessions. Next year's symposium will be in Phoenix with another special session on Climate Change Detection and Attribution.

COMPS

In his new role as Project Leader for the Customer Order Management Processing System (COMPS), NCDC's Bob Money and two others traveled to Virginia Beach, February 27-28, 1997. While in Virginia Beach, the travelers met with UNISYS personnel and received briefings on the COMPS's status and future direction.

There will be a COMPS Incremental Design Review to demonstrate development progress and gather comments from COMPS team members in Silver Spring, Maryland, March 17-19, 1997. At that time, a demonstration utilizing a NODC client connected to the COMPS server will be presented to the Board of Directors.

NOAA/NASA Long-term Archive Meeting

NCDC's Deputy Director, Ken Davidson, participated in the NOAA/NASA Long-Term Archive Meeting held at Goddard. The group

began the problem definition and concept phase for the team's task of determining how, where, and when NOAA will archive the Earth Observing System (EOS) data.

Human Resources Priorities/Issues

NCDC's Deputy Director, Ken Davidson, was selected by Department of Commerce's (DOC) Human Resources Office (HR) to participate with a team of managers in identifying the DOC's HR priorities and issues for HR services. The meeting was held at the DOC Decision Analysis Center February 25 and 26, 1997. The team developed priorities for staffing, benefits, and other services.

Climate and Global Change Science Advisory Panel Meeting

The Climate Change Data and Detection main program element of NOAA's Climate and Global Change Program managed by Tom Karl held its annual Science Advisory Panel Meeting. The panel was pleased with the progress of the program, but they have recommended a study be conducted on how much of the program's resources are being used in program-specific data management projects because of the increased demand for more support from new initiatives, such as GCOS and CLIVAR.

NOAA Strategic Planning

Ken Davidson participated in the NOAA Strategic Planning constituents meeting on Advanced Short-term Forecasts and Warnings, February 13-14, 1997. Mr. Davidson presented a briefing to the constituents of Element 1 Advanced Short Term Forecasting.

♦ Visitors

Messrs. Dan Cusimano and Roy Kapni of Computer Based Systems, Incorporated received a tour and overview of the Center's activities on

February 7, 1997.

Mr. Steve Short, Short and Associates, Dr. Paul Try, Science and Technology Corporation, and Mr. Dan Ziobro, Computer Science Corporation, visited NCDC February 21, 1997. The visitors received a familiarization tour of the Center and then briefed Center managers on their contract with the National Environmental Satellite, Data, and Information Services (NESDIS).

♦ Interactions with NOAA Line Offices

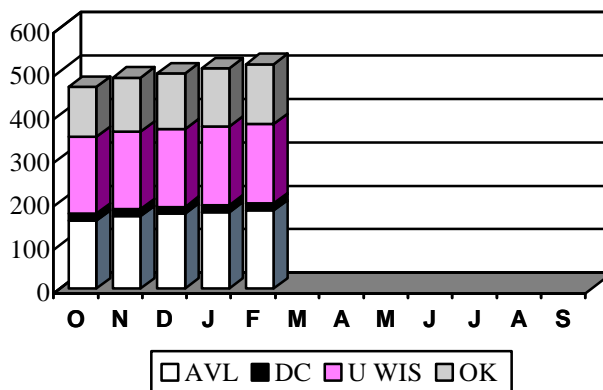
Montague's January 1997 Record Snowfall

Grant Goodge, NCDC's Data Operations Branch, was invited to join a National Weather Service (NWS) lead team sent to Montague, New York, to investigate a reported new 24-hour snowfall record of 77 inches. The team consisted of several NWS officials and three scientists from the

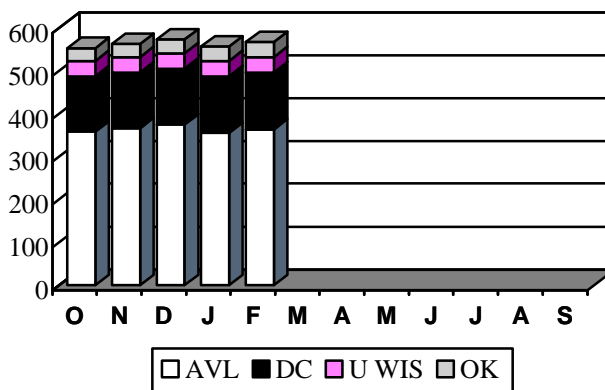
American Association of State Climatologists (AASC). The NWS Headquarters requested that the team independently and objectively assess all pertinent information regarding the snowstorm. Team members were tasked with preparing a report documenting the storm as well as the observers' method and frequency of observation. These issues are of vital importance in order to compare the existing record of 76 inches recorded at Silver Lake, Colorado, in April 1921, which was measured under more conservative standards, to the Montague storm. The NWS, NCDC, and the AASC realize the importance of preserving the integrity of the climatological data base. One of the major recommendations of this team will be that a scientific oversight group and review process be established to examine future claims and reports of record meteorological events. The final evaluation report is scheduled to be released in March.

NCDC Data Volumes

Total
Archive
(Terabytes)



Total
Archive
(Kilo Media)



Monthly
Activity
(FY 97)

